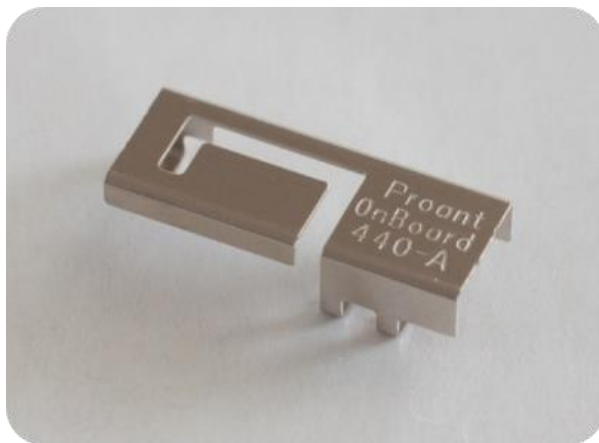


### General information

The OnBoard SMD 2400 antenna is a combination of small size, low cost and high performance, suitable for applications within the 2.4 GHz ISM band.

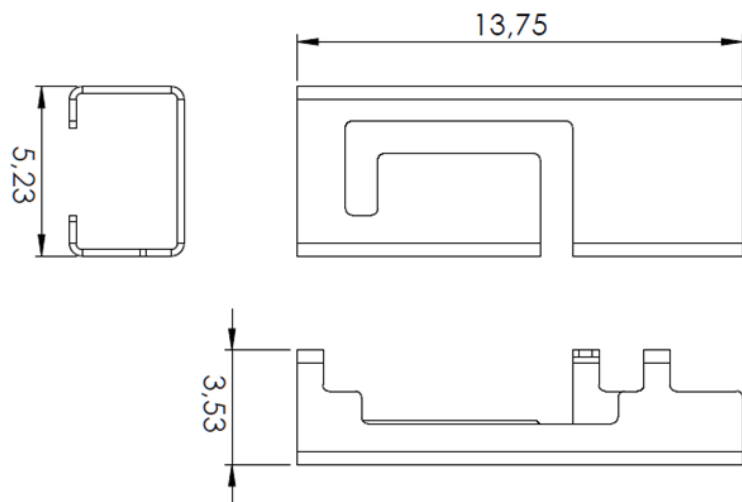


#### Technical data

Frequency	2400 - 2500 MHz
Impedance	50 Ω
Return loss*	< -6.9 dB
Total efficiency*	> -1.9 dB (65%)
Gain*	Max 4.9 dBi
Dimensions (LxWxH)	13.75 x 5.23 x 3.53 mm (0.541 x 0.206 x 0.139 in)
RoHS status	Compliant with EU directive 2011/65/EU and 2015/863
Shelf life	10 years
MSL	Level 1, unlimited
Mechanical resistance	Immunity to vibrations IEC/EN 60068-2-6, Fc test Immunity to shock IEC/EN 60068-2-27, Ea test

### Applications

- IoT-devices
- M2M-communications
- Telemetry
- Automated meter reading
- Alarms

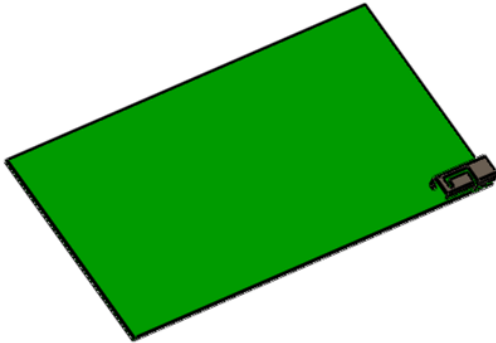


Antenna drawing. Above dimensions are given in millimeter.

\*Measured on Proant evaluation board, PRO-EB-450

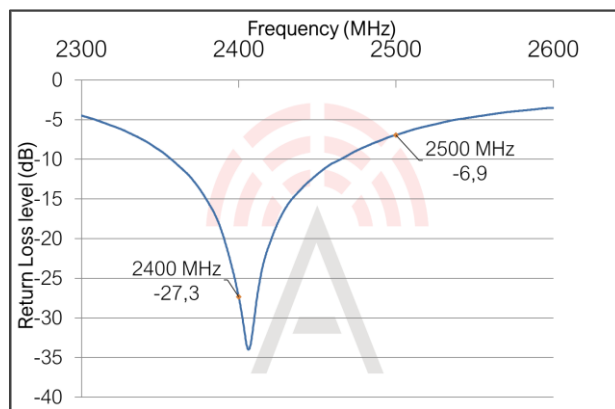
## Electrical performance

### Measurement setup

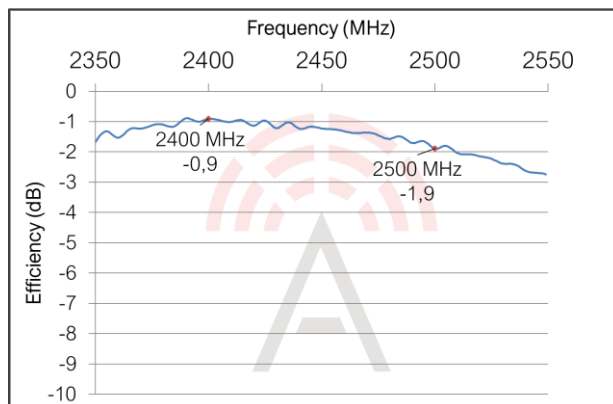


The antenna measurements were done with the OnBoard SMD 2400 evaluation board (PRO-EB-450, 100 x 50 mm) - measured in free space.

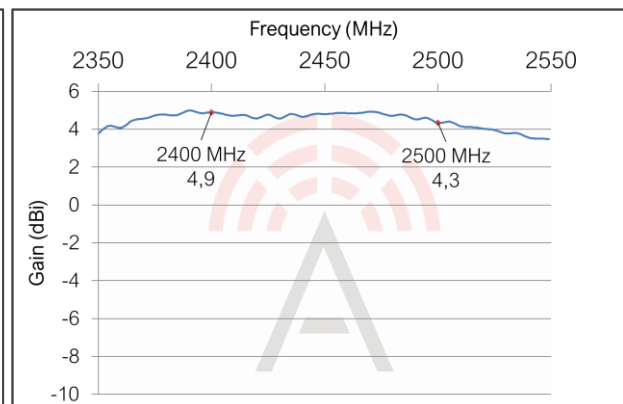
### Return loss



### Total radiation efficiency

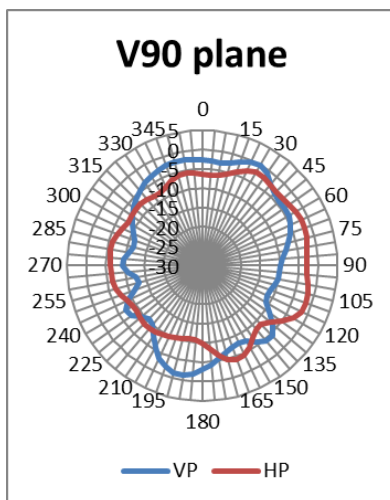
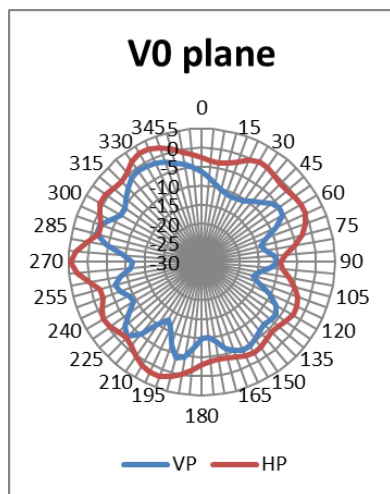
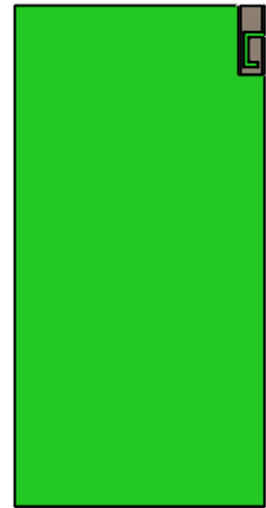
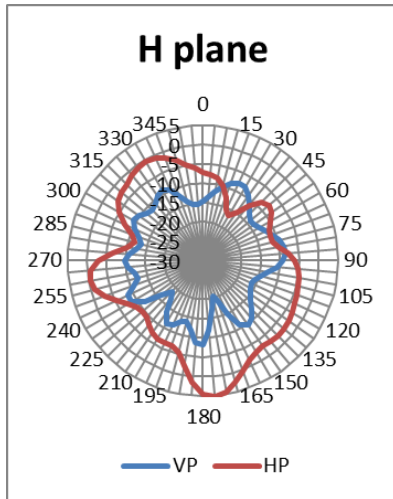


### Maximum radiation gain



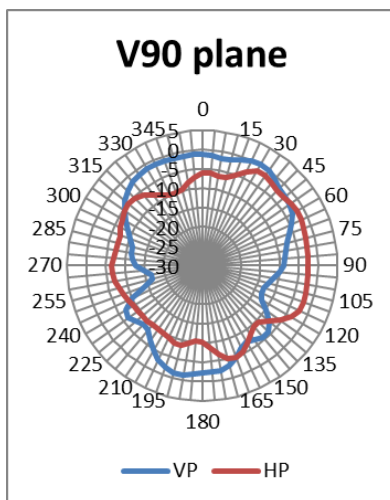
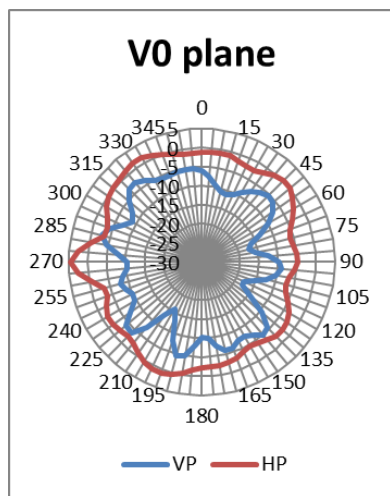
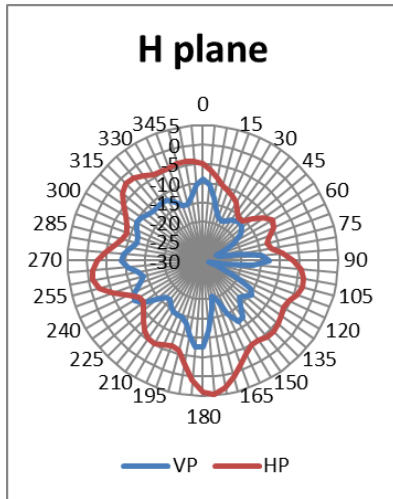
### Radiation pattern, 2400 MHz

Board rotation



**Radiation pattern, 2500 MHz**

*Board rotation*



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## Intended applications

The antenna is optimized for the ISM band of 2.4 GHz, which is utilized by several protocols. Some of the applications are:

WLAN/Wifi	IEEE 802.11 (b, g, n)	2400 - 2497 MHz
Bluetooth	IEEE 802.15.1	2400 - 2483.5 MHz
ZigBee	IEEE 802.15.4	2400 - 2483.5 MHz
RFID	ISO/IEC 18000	2450 MHz
WirelessHART	IEEE 802.15.4	2400 - 2483.5 MHz

## Ordering information

Part number	Part name	Details
PRO-OB-440	OnBoard SMD 2400	Antenna for 2.4 GHz ISM band.
PRO-EB-450	Evaluation board, Onboard SMD 2400	Evaluation board with PRO-OB-440 for WLAN/Wifi, Bluetooth, Zigbee, RFID, WirelessHART applications.

For information on sales, delivery terms and conditions and prices, please visit the Proant website ([www.proant.se](http://www.proant.se)) for a complete list of distributors.

Proant offers consultation with design-in of the OnBoard SMD antennas. Proant have all necessary capabilities for antenna design including anechoic chamber and prototype workshop. Please send your requests to [info@proant.se](mailto:info@proant.se).

## Disclaimer

The information given in this application note shall in no event be regarded as a guarantee of conditions or characteristics. With respect to any examples or hints given herein, any typical values stated herein and/or any information regarding the application of the device, Proant AB hereby disclaims any and all warranties and liabilities of any kind, including without limitation, warranties of non-infringement of intellectual property rights of any third party.